What is claimed is:

1. A system for utilizing waste heat to provide power to an electronic device in a data center, said system comprising:

at least one data center component configured to generate heat energy during operation thereof;

a converter for receiving the heat energy generated by said at least one data center component, wherein the converter is configured to convert the heat energy to electrical energy; and

a power supply operable to be recharged through receipt of the electrical energy converted by the converter, and wherein the power supply is configured to deliver the electrical energy to the electronic device.

2. The system according to claim 1, wherein said at least one data center component comprises one or more of a server, processor, microprocessor, rack power supply, and blower.

3. The system according to claim 1, wherein said power supply is configured to be trickle-charged by said electrical energy.

4. The system according to claim 3, wherein said power supply is at least one of a rechargeable battery and a capacitance device.

5. The system according to claim 1, wherein said power supply is part of an uninterruptible power source configured to supply electrical energy to the one or more data center components to enable relatively safe shutdown of one or more data center components in the event of a power outage.

6. The system according to claim 1, further comprising a heat sink connected to the at least one data center component for conducting heat generated by the at least one data center component to the converter.

7. The system according to claim 1, further comprising a heat pipe connected between the at least one data center component and the converter, wherein said heat pipe is configured to conduct heat generated by the at least one data center component to the converter.

8. The system according to claim 7, further comprising a heat sink in thermal connection between the heat pipe and the at least one data center component.

9. The system according to claim 1, further comprising:

a plurality of heat pipes in thermal connection with a plurality of data center components; and

a thermal conduit in thermal connection with said plurality of heat pipes and the converter, wherein the thermal conduit is configured to conduct heat from the plurality of heat pipes to the converter.

10. The system according to claim 9, wherein the plurality of heat pipes are connected to the plurality of data center components via a plurality of heat sinks.

11. The system according to claim 9, wherein the thermal conduit comprises an accumulator operable to accumulate heat from the plurality of heat pipes for conduction to the converter.

12. The system according to claim 9, wherein the thermal conduit enables sufficient heat transfer from the plurality of data center components to the converter to enable the converter to supply the power supply with electrical energy in a configuration yielding relatively inefficient conversion of heat energy into electrical energy by the converter.

13. The system according to claim 9, wherein the thermal conduit comprises a relatively large surface area and is positioned at a location that is spaced from the plurality of data center components.

14. The system according to claim 1, further comprising a fan configured to exhaust heated air flow from the at least one data center component, wherein the converter is located in a path of the heated air flow.

15. The system according to claim 1, further comprising one or more racks housing the at least one data center component, wherein the converter and the at least one device are connected to the rack.

16. The system according to claim 1, further comprising one or more racks housing the at least one data center component, wherein said one or more racks are categorized into one or more micro-grids within a data center, and wherein the one or more converters of the racks of one of the one or more micro-grids are configured to supply electrical energy to an uninterruptible power source configured to supply power to enable a relatively safe shutdown of one or more data components housed in the racks of the one of the one or more micro-grids in the event of a power outage.

17. The system according to claim 1, wherein the at least one data center component comprises at least one apparatus of an air conditioning unit.

18. The system according to claim 1, wherein the electronic device comprises one or more of an environmental condition sensor, an alarm, a light-emitting diode, and a location aware device.

19. The system according to claim 1, wherein the converter comprises at least one of a pyroelectric converter, a thermoelectric device, and a thermoionic device.

20. A method for utilizing waste heat to power an electronic device in a data center, said method comprising:

activating one or more components of a data center, thereby creating heat energy;

receiving the heat energy generated by the one or more components;

converting the heat energy to electrical energy; and

recharging at least one of a power supply and a power source with the converted electrical energy.

21. The method according to claim 20, further comprising:

supplying the electrical energy from the at least one of a power supply and a power source to the electronic device.

22. The method according to claim 20, wherein said step of recharging said at least one of a power supply and a power source comprises trickle charging said at least one of a power supply and a power source.

23. The method according to claim 20, wherein the step of receiving heat energy comprises receiving heat energy from at least one heat pipe connected to the at least one heat sink.

24. The method according to claim 20, wherein the one or more components comprise a plurality of components having heat sinks, and the step of receiving heat energy comprises receiving heat energy from the heat sinks of the plurality of components via heat pipes.

25. The method according to claim 20, wherein the step of receiving heat energy comprises receiving heat energy from a thermal conduit configured to receive heat energy from a plurality of heat pipes thermally connected to the one or more components.

26. The method according to claim 20, wherein the one or more components comprise components housed in one or more racks, and wherein the step of recharging a at least one of a power supply and a power source with the converted electrical energy comprises recharging an uninterruptible power supply configured to supply electrical energy to enable relatively safe shutdown of one or more data center components in the event of a power outage.

27. The method according to claim 26, further comprising:

determining whether one or more components are receiving electrical energy; and

supplying electrical energy from the uninterruptible power supply to the one or more components in response to a determination that the one or more components are not receiving electrical energy.

28. The method according to claim 20, further comprising:

supplying the converted electrical energy to a micro-grid having one or more converters and one or more uninterruptible power supplies; and

wherein the step of recharging at least one of a power supply and a power source comprises recharging the one or more uninterruptible power supplies with energy converted by the one or more converters via the micro-grid.

29. The method according to claim 20, wherein the one or more components comprise a blower of an air conditioning unit, and wherein the step of recharging at least one of a power supply and a power source with the converted electrical energy comprises recharging an uninterruptible power supply configured to supply electrical energy to enable relatively safe shutdown of one or more components in the event of a power outage.

30. A system for utilizing waste heat to power an electronic device, said system comprising:

means for generating waste heat energy;

means for receiving the waste heat energy generated by the means for generating waste heat energy;

means for converting the waste heat energy generated by the means for generating waste heat energy into electrical energy; and

means for recharging at least one of a power source and a power supply with said electrical energy, wherein said means for recharging at least one of a power source and a power supply includes means for powering the electronic device.

31. The system according to claim 30, wherein the means for recharging the at least one of a power source and a power supply comprises means for trickle-charging the power source.

32. The system according to claim 30, further comprising:

means for gathering waste heat energy connected to the means for generating waste heat energy, wherein said means for gathering waste heat energy is configured to conduct waste heat energy from the means for generating waste heat energy to the means for converting waste heat energy into electrical energy.

33. The system according to claim 32, further comprising means for transferring waste heat energy from the means for gathering waste heat energy to the means for converting waste heat energy into electrical energy.

34. The system according to claim 30, further comprising means for storing the electrical energy and means for supplying the electrical energy in the event of a power outage.